



## PATENT ABSTRACTS OF JAPAN

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**H01S 3/18**(54) **NITRIDE SEMICONDUCTOR ELEMENT**

## (57) Abstract:

PROBLEM TO BE SOLVED: To enhance the lifetime of an element by providing irregularities on the interface between a negative electrode and an n-type contact layer, thereby lowering the forward voltage and reducing generation of heat. SOLUTION: An n-type contact layer 11, an n-type clad layer 12, an active layer 13, a p-type clad layer 14 and a p-type contact layer 15 are formed sequentially on a substrate 10, thus constituting a double heterostructure. A stripe-shaped positive electrode 20 is formed, on the surface of the p-type contact layer 15, while irregularities are provided on the surface of the n-type contact layer 11 and a stripe-shaped negative electrode 22 is formed, on the irregular surface in parallel with the positive electrode 20. An insulation layer 30 is formed between the positive electrode 20 and the negative electrode 22. Since irregularities are provided on the surface of the n-type contact layer 11, contact area between the negative electrode 22 and the n-type contact layer 11 is increased, and the resistance is decreased thus lowering the forward voltage of the element. COPYRIGHT: (C)1998,JPO